



3020629

**RAE Inspection Service (1979) Ltd.**

#11,4808 - 87 Street, Edmonton, Alberta T6E 5W3

Phone: (780) 469-2401 Fax (780) 468-2422

Date Printed 2001/07/25

**Field Inspection Report**

Vessel # 3020629

<b>Client</b>	Canadian Natural Resources Ltd.		<b>Inspection Date</b>	July 03, 2001	
<b>Prov. Reg.#</b>	3020629		<b>Location</b>	Kikino North	
<b>Equipment</b>	Glycol Contactor		<b>LSD</b>	11-31-63-15W4	
<b>Tag/Equip. #</b>	V300		<b>Comp./Unit #</b>		
<b>Vessel Status</b>	In Operation		<b>Job #</b>	01-322	
<b>Manufacturer</b>	Wells Hall	<b>Serial #</b>	9474590	<b>MAWP/Temp</b>	1440 psi
<b>CRN#</b>	M2316.21	<b>Shell Material</b>	SA-516-70	<b>Shell Thickness</b>	1.125 in
<b>Corrosion All.</b>	0.125 in	<b>Head Material</b>	SA-516-70	<b>Head Thickness</b>	1.091 in
		<b>Head Material 2</b>	SA-516-70	<b>Head Thickness 2</b>	1.092 in
		<b>Channel Material</b>		<b>Channel Thickness</b>	in
<b>Diameter</b>	24 in	<b>Length</b>	in	<b>RT</b>	1
		<b>Height</b>	384 in	<b>HT</b>	Yes
<b>Year Built</b>	1994	<b>Next Inspection</b>	2005	<b>Inspection Type</b>	VE/UT
<b>Service</b>	Sweet	<b>Manway</b>	No	<b>Coating</b>	No
<b>PSV #.</b>	CE40853A10				
<b>Mfg.</b>	Farris	<b>Serial #</b>	CE40853A10		<b>Set Pressure</b>
<b>Type/Model</b>	26EA13120S6	<b>Capacity</b>	5650 SCFM	<b>Size</b>	1440 psi
<b>Date of Service</b>	2000/06/20	<b>Next Service</b>	2005	<b>Service Co.</b>	3,000 in Powercomm

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**Field Inspection Report**

**Vessel # 3020629**

**Observations:**

**External**

Vessel painted, outside building, paint weathered, in good condition. No ladder on vessel above roof. Inside building, water stains noted. Nozzles, nipples, gauges and attachments appear good. No active external corrosion noted at this time. Bottom skirt ring has surface rust at random and bolted solid to floor.

**Internal**

No access available at this time - operating.

**UT**

**Measurements in inches**

**Shell**

Top - 1.008, 1.007, 1.008, 1.011

Mid. - 1.009, 1.010, 1.011, 1.008

Bottom - 1.010, 1.011, 1.009, 1.009

Bottom Head - 1.021, 1.025, 1.019, 1.026

Inlet nozzle 4" x 0.674" - T 0.939, N 0.940, B 0.939, S 0.928

**Note**

No access to roof or upper part of vessel at this time.

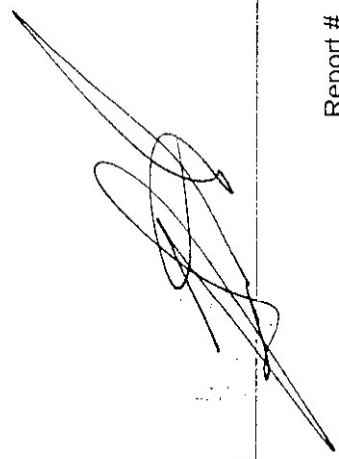
UT readings below nameplate data at this time.

**Recommendations:**

1. No concerns noted at this time.
2. Inspector to evaluate with 97 readings.

**Inspector:** Jim Longstreet

**Reviewed by:**



AB-40 to be attached



# INSPECTION SERVICE (1979) LTD.

File #: 97-246 Report #: 2079  
 Client: CANADIAN NATURAL RESOURCES  
 Location: KIKINO NORTH  
 LSD: 11-31-63-15W4  
 Distribution: Gord Cormack

## FIELD INSPECTION REPORT

Last Edited : 10/9/97

Date of Inspection: 09/22/97 Next Inspection Due: 09/22/2001

EQUIPMENT INFORMATION: Prov. Reg. #: 3020629 CRN: M2316.21 Tag #: \_\_\_\_\_  
 Province of Registration: ALBERTA Plant: KIKINO NORTH  
 Equipment Name: GLYCOL CONTACTOR Manway: NO Coating: NO  
 MAWP: 9928 kPa 54 °C Service: GAS

### ITEMS FROM PREVIOUS INSPECTIONS:

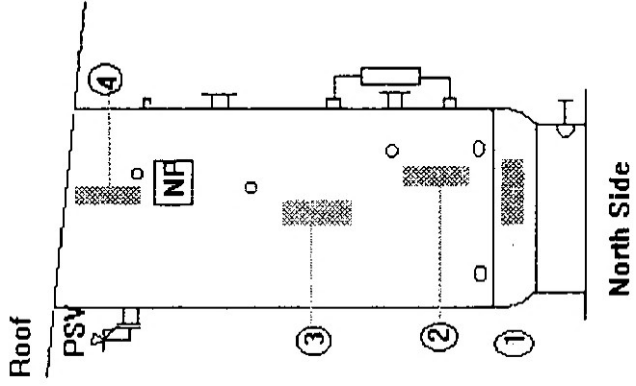
<b>EXAMINATION METHODS:</b> <input type="checkbox"/> Visual <input checked="" type="checkbox"/> UT <input type="checkbox"/> MPI <input type="checkbox"/> RT <input type="checkbox"/> LPI <input type="checkbox"/> PT <input type="checkbox"/> Other:		<b>ACCESS:</b> <input type="checkbox"/> Internal <input checked="" type="checkbox"/> External	
<b>INSPECTION:</b> <input type="checkbox"/> Initial <input type="checkbox"/> Reinspection		<b>CLEANING:</b> <input type="checkbox"/> Good <input type="checkbox"/> Poor <input type="checkbox"/> Unacceptable	
<b>PRESSURE TESTS:</b> <input type="checkbox"/> Hydro <input type="checkbox"/> Pneumatic Other: _____		Shell	Tube
<b>SAFETY VALVES:</b>		kPa	kPa
Shell Side:	MAWP (kPa) 9928	PSV Tag No. PSV3020629	SET PRESSURE(kPa) 9929
Tube Side:			CAPACITY(m3/min) 160
			LOCATION 11-31-63-15W4



INSPECTION SERVICE  
(1979) LTD.

Report No.: 2079

VESSEL SKETCH:



EXTERNAL CONDITION:



INSPECTION SERVICE  
(1979) LTD.

Report No.: 2079

OBSERVATIONS:

AREA	COMMENTS
General	UT only

ULTRASONIC THICKNESS RESULTS:

LOCATION	1	2	3	4	5	UNITS
1	30.1	30	30	30		mm
2	29.8	29.8	29.8	29.6		mm
3	29.8	29.8	29.8	29.8		mm
4	29.6	29.6	29.7	29.7		mm



INSPECTION SERVICE  
(1979) LTD.

Report No.: 2079

DISCUSSION:

RECOMMENDATIONS:

Next inspection September 2001.

INSPECTOR: I have witnessed/done the above inspections and certify that they have been done in accordance with our approved manual and that the information is accurate. I certify that the status of the Pressure equipment detailed here is:

Suitable to be returned to service	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO
Repairs are still required	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO
Repairs are complete (CB-40) attached	<input type="checkbox"/> YES	<input type="checkbox"/> NO
Suggested inspection interval		<input checked="" type="checkbox"/> N/A
		48 months

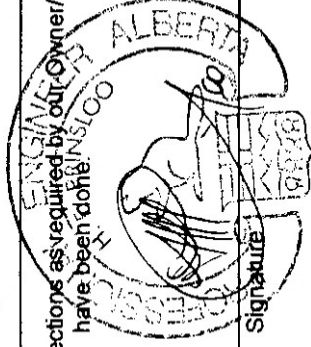
Jim Longstreet  
Inspector

Signature

10/9/97  
Date

CHIEF INSPECTOR: I certify that the information on this report is true and all inspections as required by our Owner/User Quality Assurance Program # AQP 8039 which expires in June 1999 have been done.

Hennie Prinsloo  
Chief Inspector



Signature

10/17/97  
Date

**RAE Inspection Service (1979) Ltd.**

#301, 8925 - 51 Avenue, Edmonton, Alberta, Canada T6E 5J3  
 Telephone (403) 469-2401, Facsimile (403) 468-2422

Pressure Vessel Data Input Report

File Number: 97-246 Date: 22-09-97 Page      of     

**Equipment Identification**

Owner	CNRL		In Service	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
LSD	11-31-63-15-w 4m			
Location Name	KELKIND NORTH			
Description	GLYCOL CONTACTOR (GM BUDEL)			
Manway	<input checked="" type="checkbox"/> No <input type="checkbox"/> Yes - Number <u>    </u> Size <u>    </u>	Coated Vessel		<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No

Provincial Number	3020629	CRN	M 2316.21
Tag Number	V-300	Serial Number	94-7459-0
Manufacturer	WELLS-HALL	Year Built	1994
MAWP	9928 kPa @ 54°C	MDMT	-29°C @ 9928 kPa
Test Pressure		U Stamp	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
Shell Material		Thickness	1.125
Head Material		Thickness	1.091
Tube Material		Thickness	
Corrosion Allowance		Diameter	24"
Length		Height	32 FT
Volume		Radiography Code	RT-1
Heat Treatment	YES	Drawing Reference	
Flange Rating (ANSI)	Nozzles: 600 #	Flange Rating (ANSI)	Manway:
Support	<input checked="" type="checkbox"/> Skirt <input type="checkbox"/> Saddle <input type="checkbox"/> Other:		

Last Inspection		Next Inspection	2001
Inspection Type	<input checked="" type="checkbox"/> Inventory Only <input type="checkbox"/> Visual <input type="checkbox"/> RT <input type="checkbox"/> MPT <input type="checkbox"/> LPT <input checked="" type="checkbox"/> Ultrasonic <input type="checkbox"/> Coating <input type="checkbox"/> Initial <input type="checkbox"/> Reinspection		
Cleaning	<input type="checkbox"/> Good <input type="checkbox"/> Poor <input type="checkbox"/> Unacceptable	Access	<input type="checkbox"/> Internal <input checked="" type="checkbox"/> External <input type="checkbox"/> Manway <input type="checkbox"/> Thru Nozzle
Service	<input type="checkbox"/> Steam <input type="checkbox"/> LPG <input type="checkbox"/> Oil <input type="checkbox"/> Air <input checked="" type="checkbox"/> Gas <input type="checkbox"/> Sour Gas <input type="checkbox"/> Multiphase Sour <input type="checkbox"/> Water <input type="checkbox"/> Other:		
PSV Off for Service	<input type="checkbox"/> YES - service report to be obtained <input checked="" type="checkbox"/> NO - details to be included on revers		

*my*



# Certificate of Inspection

CANADIAN NATURAL RESOURCES LTD  
SUITE 2000, ESSO PLAZA  
425-1 STREET SW  
CALGARY AB  
T2P 3L8

**LOCATION:** STOCK  
**COMPANY CODE:** V-300  
**DESCRIPTION:** VERTICAL GLYCOL CONTACTOR  
**PREFERRED RE-INSP. INTERVAL:** 2.00 YRS  
**CRN:** M2316.21

**MANUFACTURER:** WELLS-HALL FAB. & CONST. LTD.

**SERIAL # :** 94-7459-0

**YEAR BUILT:** 1994

**HEATING SURFACE:**

m2

**CUBICAL CAPACITY:**

2.397 m3

PART	MAX. AUTHORIZED PRESSURE	MAX. TEMP / MIN. TEMP	ID/LOCATION	SAFETY VALVES SET/CAPACITY	AT TEMP
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**CONTACTOR**

9928 kPa

54 C SV1  
-29 C T.B.I.

0 kPa  
0

**OWNER INSTRUCTIONS/REMARKS:**

OWNER TO VERIFY INTEGRITY OF VESSEL BY PERIODIC INSPECTION PROGRAM.

VERIFY THAT VESSEL IS PROTECTED BY A 'UV' SAFETY RELIEF VALVE, OF ADEQUATE CAPACITY, SET AT NO MORE THAN MAXIMUM PRESSURE AUTHORIZED, HAS BEEN INSTALLED IN ACCORDANCE WITH THE REGULATIONS.

CONTACT THE AREA INSPECTOR BEFORE PLACING THE VESSEL IN SERVICE.

TO BE INSTALLED IN ACCORDANCE WITH THE SAFETY CODES ACT AND THE BOILERS AND PRESSURE VESSELS REGULATIONS.

**INSPECTOR:** LEWIS E. HAJAS.

**SIGNATURE:** *L. Hajas*

**NOTE: REQUIREMENTS OF THE SAFETY CODES ACT AND THE REGULATIONS ISSUED THEREUNDER:**

THE OWNER OR PERSON IN CHARGE SHALL REPORT ALL ACCIDENTS INVOLVING A BOILER, PRESSURE VESSEL OR PRESSURE PIPING SYSTEM TO THE DISTRICT INSPECTOR IMMEDIATELY AND SHALL SEND A FULL REPORT IN WRITING TO THE CHIEF INSPECTOR AS REQUIRED BY THE ACT. NO REPAIRS OR ALTERATIONS MAY BE MADE UNLESS AUTHORIZED BY AN INSPECTOR.

(A) 3020629

**FORM U-1A MANUFACTURER'S DATA REPORT FOR PRESSURE VESSELS**  
(Alternative For Single Chamber, Completely Shop-Fabricated Vessels Only)

As Required by the Provisions of the ASME Code Rules, Section VIII, Division 1 **3020629**

- Manufactured and certified by WELLS HALL FABRICATION & CONSTRUCTION LTD. 6415, 88<sup>th</sup> ST. EDMONTON AB, T6C 1P7
- Manufactured for CANADIAN NATURAL RESOURCES LTD. SUITE 2000, ESSO PLAZA, 425-1ST ST. SW, CALGARY AB, T2P 5L3

3. Location of installation STOCK - TO BE ESTABLISHED AT A LATER DATE

4. Type VERTICAL 94-7459-0 M2316.21 33A-6979-4 1984  
 5. The chemical and physical properties of all parts meet the requirements of material specifications of the ASME BOILER AND PRESSURE VESSEL CODE. The design, construction, and workmanship conform to ASME Rules, Section VIII, Division 1 1992

6. Shell: SA 516 70 MT 1.125" 0.125 21.75" ID 34'-10 1/2" O/A  
 7. Seams: ROLL'D DRL. BUTT FULL 100% 1150-2 70 MIN EQUIV. DRL. BUTT FULL  
 8. Heads: (a) Mast. SA 516 70 MT (b) Mast. SA 516 70 MT

Location (Top, Bottom, End)	Minimum Thickness	Corrosion Allowance	Crown Radius	Knobbed Radius	Edgewise Ratio	Conical Apex Angle	Membrane Stress Ratio	Flat Diameter	Stitch to Pressure (Convex or Concave)
TOP	1.091	0.125			2:1				CONCAVE
BM	1.092	0.125			2:1				CONCAVE

9. MAWP (9928 kPa) 1440 psi at max. temp. 1440 psi at max. temp. (54°C) 2160 psi  
 10. Max. design max. temp. (-29°C) -20 °F at 1440 psi. Hydro., presu., or comb. test pressure (14893 kPa)

Purpose (Inlet, Outlet, Drain, etc.)	No.	Diag. or Size	Type	Mat.	Non-Thin	Reinforcement	How Attached	Letter
INLET/OUTLET	2	4"	RFLWN	SA 105N	2:1 600/1"		WELDED	SHBY/HC
INSP/LC/LC	3	3"	RFLWN	SA 105N	2:1 600/1"		"	SHBY/HC
DRAIN/PSV	2	2"	RFLWN	SA 105B / SA 105N	2:1 600/1"		"	SHBY/HC
LG/HT/HT/LG	14	1"	RFLWN	SA 105B / SA 105N	2:1 600/1"		"	SHBY/HC

11. Supports: SHVI YES Lug 2 LIFT Legs Other Attached WELDED TO HEAD  
 12. Remarks: Manufacturer's Partial Data Reports properly identified and signed by Commissioned Inspectors have been furnished for the following items of the report:

24" OD x 32' 5 1/2" ID x 1/4" CA GINCOL CONTRACTOR OF 3-TH INTEGRAL SCRAPER SECTION V-1 2  
 IMPACT EXEMPT PER UG 203(c) 12:5 640 WT = 10 000 LB  
 RADIOGRAPHY PER UG 114 AS BUILT DRAWING A-7459-2 VOL = 84.7 FT.

We certify that the statements made in this report are correct and that all details of design, material, construction, and workmanship of this vessel conform to the ASME Code for Pressure Vessels, Section VIII, Division 1. "U" Certificate of Authorization No. 12595 expires JULY 31, 1984  
 Date NOV 2, 1994 Co. name WELLS HALL FABRICATION & CONSTRUCTION LTD. signed J.S. [Signature]  
 CERTIFICATE OF SHOP INSPECTION  
 Vessel constructed by WELLS HALL FABRICATION & CONSTRUCTION LTD. EDMONTON, AB  
 I, the undersigned, holding a valid commission issued by the National Board of Boiler and Pressure Vessel Inspectors and/or the State or Province of ALBERTA and employed by ALBERTA LABOR BOILER & PRESSURE VESSEL SAFETY have inspected the component described in this Manufacturer's Data Report on Nov 2, 1994, and state that, to the best of my knowledge and belief, the Manufacturer has constructed this pressure vessel in accordance with ASME Code, Section VIII, Division 1. By signing this certificate neither the Inspector nor his employer makes any warranty, expressed or implied, concerning the pressure vessel described in this Manufacturer's Data Report. Furthermore, neither the Inspector nor his employer shall be liable in any manner for any persons; injury or property damage or loss arising from or connected with this inspection.  
 Date Nov 2, 1994 Signed R. [Signature] Commissioned Inspector Alberta 398